

ABSTRACT

[0057] A sense circuit and method for reading a resistance level of a programmable conductor memory element are provided. All rows and columns in a given memory array are initially held to the same potential. A desired row line is enabled by bringing it to approximately ground. The difference in voltage potential across a diode circuit of a selected cell activates the diodes and initiates current flow through the desired memory element of the desired cell. A column line associated with the cell is discharged from a precharge value through the diode circuit and memory element. The discharging voltage at the column line is compared with a reference voltage. If the voltage at the column line is greater than the reference voltage, then a high resistance level is detected, and, if the column line voltage is less than the reference voltage, a low resistance level is detected.